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10/520,368

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EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/520,368 | <b>Applicant(s)</b><br>HOLMES ET AL. |  |
|                              | <b>Examiner</b><br>Audrey Y. Chang   | <b>Art Unit</b><br>2872              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Remark*

- This Office Action is in response to applicant's amendment filed on October 22, 2008, which has been entered into the file.
- By this amendment, the applicant has amended claims 1, 3, 4, 8, and 15.
- Claims 1-15 remain pending in this application.
- 

### *Claim Objections*

1. **Claims 2-4, and 12 are objected to because of the following informalities:**

(1). The phrase "Hi holographic recording" recited in claims 2 and 12 and the phrase "H2 recording" recited in claim 12 are confusing since it is not clear what are these phrase are referred to? What are considered to be "H1" and "H2"?

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 2, 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Gayeski et al (PN. 3,749,469).**

**Gayeski et al** teaches a method for recording a hologram wherein the method including the step of exposing an *object* (110, Figure 1), of *diffuses* light, wherein the diffused light is generated from a *pinhole array* (114), serves as the **aperture** mask, is placed at *upstream* of the object, wherein the diffused object light is directed to a *hologram recording medium*, at where interferes with a *coherent*

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*reference light beam* (102) to produce *interference pattern* that is recorded as the hologram. The hologram recording medium is placed at the image plane of the pinhole array that suggests that the sample portions of the object created by the divergent or diffused beams from the pinhole array are illuminated at different and non-overlapping portions of the hologram recording medium.

Although this reference does not teach explicitly that the hologram of the interference pattern recorded is for an optically variable security device, but it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Madham*, 2 USPQ2d 1647 (1987).

With regard to claim 2, the hologram can certainly include an artwork mask, since the term "artwork" can be anything. The object can also be a three dimensional object.

With regard to claims 9 and 10, Gayeski teaches that the aperture mask includes a plurality of pinholes that by definition has non-rectilinear edge.

**This reference has therefore anticipated the claims.**

**4. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Deml et al (PN. 3,891,975).**

**Deml et al** teaches a method for recording hologram wherein the method comprises the step of providing object illuminating beam from source (15, Figure 6 and 7), through a diffuser (12) to provide a *diffused object beam* for diffusively illuminating an object (10) and placing a slit or *mask* (11) having an apertures downstream of the object beam, serves as the aperture mask. The diffused object beam is then directed to a recording medium (20) to interfere with a *reference beam* (134 as shown in Figure 11) wherein the interference pattern is recorded as the hologram. It is implicitly true that both the reference beam and object beam are coherent to each other to enable the interference. As shown in Figure 6, the

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aperture mask or the scanning slit ensures the different part of the object are image on the respective different non-overlapping parts of the recording medium

Although this reference does not teach explicitly that the hologram of the interference pattern recorded is for an optically variable security device, but it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Madham, 2 USPQ2d 1647 (1987).

With regard to claim 2, the object is a recorded hologram, that is H1 holographic recording.

With regard to claims 5-6, the aperture mask (11) has an elongated aperture as shown in Figure 6. The elongated aperture is parallel to the object which implicitly has the effect that the movement effect can be recorded in the medium.

**This reference anticipated the claims.**

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 3-4 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al in view of the patent issued to Buchkremer et al (PN. 5,973,807).**

The hologram and method for recording it as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

**With regard to claims 3-4**, Deml et al teaches that the aperture mask is comprised of an elongated aperture, (please see Figure 6), but it does not teach explicitly that the object for recording the hologram is comprised of a sequence of steps in a moving image or movement is being recorded.

**Buchkremer et al** in the same field of endeavor teaches a hologram recording method wherein sequential image that include movement of object can be recorded, (please see column 2, lines 1-3). **Buchkremer et al** teaches that aperture mask with elongate opening or aperture, (please see Figure 3) wherein the aperture is extended parallel with the object is utilized so that movement effect of the object is recorded. It would then have been obvious to one skilled in the art to apply the teachings of **Buchkremer et al** to modify the aperture mask of **Yamazaki** to allow movement of the object be recorded to make the recorded hologram or interference pattern with more desired movement design. It is implicitly true that the desired design can be recorded in the sequence of movement of the image.

**With regard to claim 11**, **Buchkremer et al** teaches that for each object scene an aperture is defined, to ensure the movement effect is recorded.

**With regard to claim 12**, **Buchkremer et al** also teaches that the recording of each movement scene can be utilized to record a master hologram H1, (please see Figure 8) and then the master hologram H1 is being used to record or duplicate hologram H2, by exposing the H1 hologram with conjugate reference beam (R1\*) to reproduce the recorded the diffused object image and causes the reproduced object image to interfere with a reference beam (R2) in a recording medium (please see Figure 9). It would then have been obvious to one skilled in the art to apply the teachings of **Buchkremer et al** to modify the recording method of **Yamazaki** for the benefit of using well known contact method namely recording a master hologram and use the mater hologram to duplicate the hologram as alternative method to mass producing the final hologram.

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**7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Deml et al and Buchkremer et al as applied to claims 1 and 5 above, and further in view of the patent issued to Benton et al (PN. 5,121,229).**

The hologram and method for recording the hologram as taught by **Deml et al** in combination with the teachings of **Buchkremer et al** as described for claims 1 and 5 above have met all the limitations of the claims.

Deml et al teaches that the aperture mask has an elongated openings or apertures but it does not teach if the bar shaped aperture is extended transverse to the object for creating color variation. **Benton et al** in the same field of endeavor teaches a method for recording hologram wherein aperture or slits with extension transverse to the object (please see Figure 4A) are provided to record *multi-color* hologram so that when reproduced by white light multi-color effect is observed, (please see column 4, lines 24-28). It would then have been obvious to one skilled in the art to apply the teachings of Benton et al to modify the apertures or openings to allow multi-color effect be recorded to make the hologram has full color.

With regard to claim 8, it would have been obvious to one skilled in the art to apply the teachings of Buchkremer et al and Benton et al to modify the apertures or openings to have the shape for allowing both movement effect and multi-color effect be recorded.

**8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al (PN. 3,891,975) in view of the patent issued to Gayeski (PN. 3,749,469).**

The hologram and method for recording the hologram as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

Deml et al teaches that the aperture mask has an elongated opening or aperture but it does not teach explicitly that the apertures are of pinholes or non-rectilinear shape. But since the specification fails to teach the criticality of the particular shape of the aperture, such feature is considered to be obvious modification to one skilled in the art to achieve different light illumination. Gayeski in the same field of

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endeavor teaches to use a pinhole array with pinhole aperture plate for controlling the light illumination, (please see Figure 1). One skilled in the art would then have been motivated to apply the teachings of Gayeski to modify the aperture shape.

**9. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Gayeski et al (PN. 3,749,469) in view of the patent issued to Yamazaki (PN. 5,535,023) .**

The hologram and method for making the hologram as taught by Gayeski et al as described for claim 1 above has met all the limitations of the claims.

With regard to claims 13-15, Gayeski et al does not teach a security device that includes the hologram and an item such as banknote or certificate of authenticity includes the security device. **Yamazaki** in the same field of endeavor teaches a hologram can be recorded to include information that is applied to provide judge for genuine or a forgery, i.e. serves as the security device, (please see column 5, lines 2-8). The hologram can be recorded on any cards such as banknote or certificate of authority, (please see column 5, lines 7-8). It would then have been obvious to one skilled in the art to apply the teachings of Yamazaki to extend the application of the hologram of Gayeski et al as security device recorded on banknote etc.

**10. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al (PN. 3,891,975) in view of the patent issued to Yamazaki (PN. 5,535,023) .**

The hologram and method for making the hologram as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

With regard to claims 13-15, Deml et al does not teach a security device that includes the hologram and an item such as banknote or certificate of authenticity includes the security device. **Yamazaki** in the same field of endeavor teaches a hologram can be recorded to include information that is applied to provide judge for genuine or a forgery, i.e. serves as the security device, (please see column 5,



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lines 2-8). The hologram can be recorded on any cards such as banknote or certificate of authority, (please see column 5, lines 7-8). It would then have been obvious to one skilled in the art to apply the teachings of Yamazaki to extend the application of the hologram of Deml et al as security device recorded on banknote etc.

### ***Response to Arguments***

11. Applicant's arguments filed on October 22, 2008 have been fully considered but they are not persuasive.

12. In response to applicant's arguments which state that the cited Gayeski reference teaches to illuminate the whole object which therefore would not have different part of the object imaged on the respective different non-overlapping parts of the recording medium, the examiner respectfully disagrees for the reasons stated below. The applicant is respectfully noted even if the light from each pinhole will illuminate the whole object, but since the pinholes are located along a vertical line that will make the images of the object formed on the recording medium differently along the vertical lines. Also since the whole object is intended for recording, different part of the object has to be spatially different or distinct from each other so that the whole object can be recorded as an image. The applicant is respectfully noted that the instant application also indicates that the whole object is being illuminated and projected at the recording medium. So the cited Gayeski has different part of the object imaged on the respective different non-overlapping parts of the recording medium the same way as the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

***Audrey Y. Chang, Ph.D.***  
***Primary Examiner***  
***Art Unit 2872***

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/Audrey Y. Chang/  
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